

CLAIMS

1. A separator adapted for separating liquid and solid waste, wherein the separating means has a substantially non porous inclined surface with a curved lower outer edge to allow solid waste to fall off the separator while liquid waste moves around the curved lower outer edge.
2. The separator as claimed in claim 1, wherein the inclined surface is an inclined wall that has a convex curved lower edge.
3. The separator as claimed in claim 2, wherein the convex curved lower edge extends, at least in part, substantially horizontally under the inclined wall.
4. The separator as claimed in claim 1, wherein the curved lower outer edge includes a flange positioned for directing liquid waste into a liquid collection means.
5. The separator as claimed in claim 4, wherein said flange extends downwardly from a substantially horizontal part of the curved lower outer edge.
6. The separator as claimed in claim 1, comprising a plurality of substantially non porous inclined surfaces.
7. The separator as claimed in claim 1, substantially in the shape of a cone with the apex locatable adjacent a waste discharge outlet and the curved lower edge and base surface locatable to overhang a liquid collection means.
8. The separator as claimed in claim 1, comprising two substantially non porous inclined surfaces, each having curved lower outer edges, and sharing a common upper edge which defines a top edge of the separating means.
9. The separator as claimed in claim 8, wherein each of the inclined surfaces is elongate and shares a common longitudinal edge.

10. The separator as claimed in claim 8, further comprising a longitudinal flange along each of the curved lower outer edges, said longitudinal flanges being positioned for directing liquid waste into a liquid collection means.
11. The separator as claimed in claim 8, wherein a first end of the separator is locatable adjacent to a waste discharge outlet and second end of the separator is locatable distal to the waste discharge outlet.
12. The separator as claimed in claim 11, wherein, in use, waste is delivered longitudinally along the top edge of the separator.
13. The separator as claimed in claim 11, wherein each of the inclined surfaces is tapered towards the second end of the separator, such that the second end is smaller in cross-section than the first end.
14. The separator according to claim 1, having a height dimension of less than about 200 mm.
15. A waste treatment system including a decomposition chamber having an inlet, said decomposition chamber comprising:
 - a separator, as claimed in any one of the claims 1 to 14; and
 - a solid waste treatment means and a liquid waste treatment means.
16. A waste treatment system as claimed in claim 15, wherein the separator, solid waste treatment means and liquid waste treatment means are arranged in relative close proximity with each other to provide a compact treatment apparatus.
17. A waste treatment system as claimed in claim 15, wherein the decomposition chamber is circular in cross section to provide maximum usage of space within the chamber and house the components in a compact manner.

18. A waste treatment system as claimed in claim 15, wherein the waste treatment system is modular with a plurality of units arranged to handle larger amounts of waste.
19. A waste treatment system as claimed in claim 15, wherein the separator is in the form of either:
- (a) a substantially non-porous separating cone, wherein an apex of said cone is located adjacent a waste discharge outlet; or
 - (b) two elongate substantially non porous inclined surfaces, each having curved lower outer longitudinal edges, and sharing a common upper longitudinal edge which defines a substantially horizontal top edge of the separator, wherein one end of the separator is located adjacent a waste discharge outlet.
20. A waste treatment system as claimed in claim 19, wherein the inlet and/or the waste discharge outlet includes a skirt or baffle for restricting flow.
21. A waste treatment system as claimed in claim 15, including one or more substantially horizontal support mesh screens, said mesh screens being positioned for receiving solid waste below the separator.
22. A waste treatment system as claimed in claim 21, including a plurality of support mesh screens with an upper screen having comparatively wider apertures than a lower adjacent screen.
23. A waste treatment system as claimed in claim 21, wherein an uppermost mesh screen includes a plurality of baffles for breaking up the solid waste.
24. A waste treatment system as claimed in claim 23, wherein the baffles are in the form of mushroom-shaped projections or in the form of nodules.
25. A waste treatment system as claimed in claim 21, wherein a lowermost mesh screen is inclined to direct decomposed particulate solids towards a solids pump well.

26. A waste treatment system as claimed in claim 21, wherein the mesh screens support worms and other suitable organisms for decomposing waste and/or reducing particle size.
27. A waste treatment system as claimed in claim 21, wherein particulate solids can accumulate in the pump well and are then pumped out at regular intervals or when a predetermined height is reached.
28. A waste treatment system as claimed in claim 15, including a liquid collection chamber for collecting liquid waste from the separator and introducing said liquid waste to the liquid waste treatment means.
29. A waste treatment system as claimed in claim 15, wherein the liquid waste treatment means includes one or more layers of trickle bed media.
30. A waste treatment system as claimed in claim 29, wherein the liquid waste treatment means includes a plurality of layers with alternating relatively coarse trickle bed media and relatively fine trickle bed media.
31. A waste treatment system as claimed in claim 30, wherein each of the relatively coarse trickle bed media layers is well ventilated.
32. A waste treatment system as claimed in claim 29, wherein the trickle bed layers are formed annularly about the solid waste treatment means.
33. A waste treatment system as claimed in claim 29, wherein a wall between the trickle bed layers and the solid waste treatment means is porous for allowing ventilation of the trickle bed layers and a passage for worms and suitable organisms.
34. A waste treatment system as claimed in claim 29, including a liquid pump well for collecting liquid that has passed through the trickle bed.

35. A waste treatment system as claimed in claim 34, wherein the liquid pump well includes a pump for pumping liquid out of the liquid pump well at regular intervals or when the liquid reaches a predetermined level.

36. A waste treatment system as claimed in claim 35, wherein liquid in the liquid pump well may be reintroduced to the trickle bed or discharged from the treatment apparatus.

37. A waste treatment system as claimed in claim 35, wherein the collected liquid may pass into the solids pump well for removal when the pump in the liquid pump well fails.

38. A waste treatment system as claimed in claim 15, wherein accumulated particulate solids can pass through to the liquid pump well for removal when the solid pump fails.

39. A waste treatment system as claimed in claim 38, wherein the vegetation cell supplies nutrients and/or moisture to a plant-growing medium.

40. A self-contained waste treatment system, which does not require human intervention for removal of treated waste, comprising:

a decomposition chamber having a waste chamber inlet, said decomposition chamber housing a separator, a solid waste treatment means and a liquid waste treatment means; and

a vegetation cell for supporting a plant,

wherein, in use, treated solid waste and, optionally, treated liquid waste is discharged to the vegetation cell.

41. A self-contained process for treating waste, which does not require human intervention for removal of treated waste, said process comprising:

(f) separating liquid and solid waste using a separator;

(g) treating the separated liquid waste in a liquid waste treatment means;

(h) treating the separated solid waste in a solid waste treatment means;

- (i) optionally further treating the liquid waste; and
- (j) discharging the treated solid waste and, optionally, the treated liquid waste to a vegetation cell.